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09/700,168	11/09/2000	Tetsujiro Kondo	450101-02398	2147

			EXAMINER
20999	7590	01/12/2005	LE, BRIAN Q

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2623	

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
 after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
 Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
 earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _27 September 2004_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is

closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-34_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-34_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment and Arguments

1. Applicant's amendment filed September 27, 2004, has been entered and made of record.

2. Applicant's arguments with regard to claims 1-22 and 26-33 have been fully considered, but are not considered persuasive because of the following reasons:

For claim 1, the Applicant argues that Etoh does not teach the determining the convergence **based on the number of times of reclassification of sample vectors (emphasis added)**. However, the Applicant does not claim this limitation in the claim 1. Also, the new amended limitations of claim 1 created ambiguity. Appropriate corrections are required.

Thus, the rejections of all of the claims are maintained.

3. Applicant's arguments, see "Remarks", filed September 27, 2004, with respect to the rejection(s) of claim(s) 23 under 35 U.S.C 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Amor U.S. Patent No. 4,931,869.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 1 and 7, there is no clear support in the original disclosure that

show the limitation "convergence detection means until said convergence detection means has detected convergence **based on said number of sample data**, and for determining the group feature data of said each group prevailing at the time of said convergence as ... of said each group" (emphasis added). Claims not specifically addressed depend from indefinite antecedent claims.

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7.   Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims 1 and 7 recite "decision means for repeating the processing by said group feature data detection means, re-classification means, and ... sample data of said each group" are not well written so that one skill in the art can understand clearly. Appropriate correction is required. In addition, the claims 8-9 and 12-13 recite "a step of repeating the processing by said group feature data detection step ... representative sample data of each group." are not well written so that one skill in the art can understand clearly. Appropriate correction is required. Claims not specifically addressed depend from indefinite antecedent claims.

Claim Objections

8.   Claims 1, 7-9, 12-13, and 33 are objected to because these claims are very difficult to understand due to the use of confusing language. Appropriate correction is required. The prior art rejection based on the Examiner's best understanding.

Claim Rejections - 35 USC § 102

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10.   Claims 1-19 and 29-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Etoh

U.S. Patent No. 5,519,789.

Regarding claim 1, Etoh teaches a representative sample generating apparatus for

generating representative sample data of each of a plurality of groups, based on a plurality of

sample data initially classified into said plural groups (Abstract), said apparatus comprising:

Group feature data detection means for determining group feature data representing

feature of sample data in said each group (clustering features/parameters of pixels into class)

(column 3, lines 20-25, 44-46);

Distance detection means for detecting the distances between all of the sample data and

the group feature data of said each group (column 3, lines 45-47, 52-53, 56-58; column 4, lines

10-13);

Re-classification means for re-classifying all of said sample data into said plurality of

groups based on said distances (maximum likelihood class selecting mean) (column 3, lines 51-

53);

Convergence detection means (class data changing mean) for detecting whether or not the

number of sample data classified into groups different from each previous group is converged as

a result of said re-classification (column 3, lines 54-58); and

Decision means for repeating (column 7, lines 8-23) the processing by said group feature data detection means (clustering features and likelihood calculation of clusters) (column 3, lines 20-25, 44-46), re-classification means (the maximum classification calculation after the likelihood calculation of clusters) (column 3, lines 51-53) and said convergence detection means until said convergence detection means has detected convergence (column 10, lines 40-45) based on said number of sample data (convergence base on the size of the sampling data, 30,000 data), and for determining the group feature data of said each group prevailing at the time of said convergence as representative sample data of said each group (column 5, lines 55-67).

Regarding claim 2, Etoh further teaches the representative sample generating apparatus wherein said group feature data detection means detects an average value (mean) of sample data in each group as said group feature data (mean vector) (column 4, lines 10-12, 49-67).

For claim 3, Etoh discloses the representative sample generating apparatus wherein said convergence detection means detects convergence when the number of sample data classified into a group different from the previous group is equal to or smaller than a pre-set number (column 7, lines 10-16).

Referring to claim 4, Etoh teaches the representative sample generating apparatus wherein said distance detection means detects the distance by calculating the correlation (the calculation of covariance and likelihood) of the group feature data of each group with respect to all of sample data (column 7, lines 35-67).

For claim 5, Etoh also discloses the representative sample generating apparatus wherein said sample data is image data (pixel data of an image) (column 12, lines 20-25).

As to claim 6, Etoh discloses the representative sample generating apparatus wherein said group feature data detection means generates group feature data according to the orientation (position/location/direction) of an image present by the image data (column 3, line 40; FIG. 2; column 9, lines 35-50; and column 4, lines 1-2).

Regarding claims 7-9, please refer to claim 1 for the explanation.

Regarding claims 10-11, please refer back to claims 2-3 respectively.

For claims 12-19, please refer to claim 1 for the explanation. In addition, Etoh also teaches a concept of recording medium (memory) (FIG. 1, box 102) and computer-controllable program (system control) (column 11, lines 1-4) as disclosed in claims 13, 16 and 19 and an apparatus (column 3, line 30) as disclosed in claims 14 and 17.

For claims 29-33, please refer back to claims 1,

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12.   Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Etoh U.S. Patent No. 5,519,789 as applied to claim 1 above, and further in view of Cooper U.S. Patent No. 6,309,884.

Regarding claim 20, Etoh teaches a coefficient data generating (column 4, lines 57-61) apparatus for generating apparatus for generating a coefficient data set adapted for generating sample feature data from new sample data not having sample feature data, based on a database in

which there are pre-stored said sample feature data and sample data associated with said sample feature data (FIG. 1, 114, 115, 119; and column 3, lines 30-40), said apparatus comprising:

Classification means for classifying said sample data into a plurality of classes, based on the relation thereof with representative sample data which is set to each classification and which is associated with the sample feature data (column 3, lines 20-25, 44-46);

Means for generating, for each class, a normal equation having the values of the sample feature data and the sample data as previously known data and having coefficient data as unknown data (column 4, equation 4 and column 5, lines 13-67); and

Coefficient data generating means for solving said normal equation for each class to generate said coefficient data set for each class (column 4, lines 64-67 and column 5, lines 13-67).

However, Etoh does not explicitly teach the equation based on least square. Cooper further teaches a method collecting and classifying data (column 6, lines 50-60) wherein coefficient data generating means for solving said normal equation based on least square for each class to generate said coefficient data set for each class (column 6, lines 65-67 and column 7, lines 1-9). Modifying Etoh's method of classifying data according to Cooper would able to use a normal equation based on least square to generate coefficient data. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Etoh according to Cooper.

For claim 21-22, please refer back to claim 20 for the explanation. In addition, Etoh also teaches a concept of recording medium (memory) (FIG. 1, box 102) and computer-controllable program (system control) (column 11, lines 1-4) as disclosed in claim 22.

13. Claims 23 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Etoh

U.S. Patent No. 5,519,789 as applied to claim 1 above, and further in view of Amor U.S. Patent

No. 4,931,869.

For claim 23, please refer to claim 1, claim 3, and claims 12-19 respectively for further

explanation. Etoh does not explicitly disclose that sample data generating means is base on

orientation. Amor teaches a method of classifying data wherein the sample data generation

means (data flow generation) is base on orientation (column 6, lines 4-17). Modifying Etoh's

method of classifying data according to Cooper would able to utilize the orientation to generate

and optimize data flow. This would improve processing and therefore, it would have been

obvious to one of the ordinary skill in the art to modify Etoh according to Amor.

Regarding claim 26, Etoh further teaches the sample feature data apparatus wherein said

distance detection means detects a distance by calculating the correlation between input sample

data and representative sample data generated initially for each of said groups (FIG. 5).

For claim 27, please refer back to claim 5.

For claim 28, please refer back to claim 26 for the explanation.

14. Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Etoh

U.S. Patent No. 5,519,789 as applied to claim 23 above, and further in view of Kondo U.S.

Patent No. 5,966,183.

For claim 24, Etoh further teaches a sample feature data generating wherein said sample

feature data generating means (Abstract) includes storage means for storing a coefficient data

(coded pixel value) (column 3, lines 63-64) set pre-set for each class (FIG. 1, element 114);

However, Etoh does not clearly indicates a prediction equation generation generating means for generating a prediction equation based on the coefficient data set read out from said storage means based on a class determined by said classification means; and

Data generating means for solving said prediction equation to generate said sample feature data. Kondo teaches a classification method means for generating a prediction equation (column 5, lines 35-45) on the coefficient data (FIG. 4, boxes 14, 13A, 13B, 13C, and 13D; FIG. 10, SP6) and generate data means for solving said prediction equation to generate said sample feature data (FIG. 4, box 15; FIG. 10, SP7). Modifying Etoh's method of sample feature data generation and classification according to Kondo would able to generate prediction equation to predict coefficient data to further classify the data appropriately. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Etoh according to Kondo.

Regarding to claim 25, Etoh does not teach the generation sample feature data having consecutive values on a line interconnecting said that plural representative sample data. Kondo teaches a concept of generating consecutive values on a line interconnecting said plural representative sample data (FIG. 1, FIG. 8A-8C, FIG. 9). Modifying Etoh's method of sample feature data generation and classification according to Kondo would able to interconnect sample data together to show the pattern for further classification purpose. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Etoh according to Kondo.

15.   Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Etoh U.S. Patent No. 5,519,789 and Cooper U.S. Patent No. 6,309,884 as applied to claim 20 above, and further in view of Amor U.S. Patent No. 4,931,869.

Regarding claim 34, please refer back to claim 23 for the teaching and explanation.

Contact Information

16.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 703-305-5083. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-5397 for regular communications and 703-308-5397 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

BL
January 4, 2005

SAMIR AHMED
PRIMARY EXAMINER